

CLAIM AMENDMENTS

IN THE CLAIMS

This listing of the claims will replace all prior versions, and listing, of claims in the application or previous response to office action:

1. **(Currently Amended)** A fluid injector comprising:
a housing,
a valve body, and
an actuator unit that is inserted into the housing,
wherein the valve body comprises:
a cartridge with a recess that takes in a needle,
a hollow body, which is arranged in a fixed position to the needle and forms a first spring rest,
a valve cap which takes in the cartridge and forms a second spring rest, **and**
a return spring, that rests on one hand on the first spring rest and on the other hand on the second spring rest,
a first axially extendable interface between the housing and the valve cap configured to allow axial extension at least during a calibration,
a second axially extendable interface between the valve cap and the cartridge configured to allow axial extension at least during the calibration,
a first seal maintained within the first axially extendable interface, and
a second seal maintained within the second axially extendable interface,
wherein ~~the valve cap, the housing and the cartridge being formed such that before the valve cap and the housing and the valve cap and the cartridge are permanently fixed to each other the valve cap is moveable relative to the housing and the cartridge while~~ the housing and the cartridge stay in a fixed position relative to each other **during the calibration.**

2. (Previously Presented) A fluid injector according to claim 1, wherein the valve cap or the cartridge comprises a first sealing element, which seals the connection between the valve cap and the cartridge.

3. (Previously Presented) A fluid injector according to claim 1, wherein the housing or the valve cap comprise a second sealing element, which seals the connection between the housing and the valve cap.

4. (Previously Presented) A fluid injector according to claim 1, wherein the valve cap comprises a thread and the housing comprises a corresponding thread and the valve cap being threaded into the thread of the housing.

5. **(Currently Amended)** A method for manufacturing a fluid injector with:
a housing,
a valve body, and
an actuator unit[[,]] that is inserted into the housing,
with the valve body comprising:
 a cartridge with a recess[[,]] that takes in a needle,
 a hollow body, which is arranged in a fixed position to the needle and forms a
first spring rest,
 a valve cap, which takes in the cartridge and forms a second spring rest,
 a return spring, that rests on one hand on the first spring rest and on the other
hand, on the second spring rest, ~~with the valve cap, the housing and the cartridge~~
 a first axially extendable interface between the housing and the valve cap
configured to allow axial extension at least during a calibration,
 a second axially extendable interface between the valve cap and the
cartridge configured to allow axial extension at least during the calibration,
 a first seal maintained within the first axially extendable interface, and
 a second seal maintained within the second axially extendable interface,
~~being formed such, that before the valve cap and the housing and the valve cap~~
~~and the cartridge are permanently fixed to each other the valve cap is moveable relative~~
~~to the housing and the cartridge while the housing and the cartridge stay in a fixed~~
~~position relative to each other,~~
with the steps of:
 [[-]] calibrating the fluid flow characteristics of the fluid injector by moving
the valve cap axially relative to the housing and the cartridge while maintaining first and
second seal, and thereafter
 [[-]] permanently fixing the valve cap to the housing and to the cartridge.

6. (Currently Amended) A fluid injector comprising:
a housing,
an actuator unit arranged within the housing,
a cartridge with a recess and a needle arranged in the recess,
a hollow body arranged in a fixed position to the needle and forming a first spring rest,
a valve cap in which the cartridge is arranged and forming a second spring rest, and
a return spring resting on the first and second spring rest,
a first axially extendable interface between the a cylindrical lower portion of the housing and an overlapping cylindrical upper portion of the valve cap configured to allow axial extension at least during a calibration,
a second axially extendable interface between the valve cap and the cartridge configured to allow axial extension at least during the calibration,
a first seal maintained within the first axially extendable interface, and
a second seal maintained within the second axially extendable interface,
wherein ~~the valve cap, the housing and the cartridge being formed such, that before the valve cap and the housing and the valve cap and the cartridge are permanently fixed to each other the valve cap is moveable relative to the housing and the cartridge while~~ the housing and the cartridge stay in a fixed position relative to each other during the calibration.

7. (Previously Presented) A fluid injector according to claim 6, wherein the valve cap or the cartridge comprises a first sealing element, which seals the connection between the valve cap and the cartridge.

8. (Previously Presented) A fluid injector according to claim 6, wherein the housing or the valve cap comprise a second sealing element, which seals the connection between the housing and the valve cap.

9. (Previously Presented) A fluid injector according to claim 6, wherein the valve cap comprises a thread and the housing comprises a corresponding thread and the valve cap being threaded into the thread of the housing.

10. (New) The fluid injector of claim 1, wherein the first and second seals prevent substantial leakage of fluid from the fluid injector when fluid is introduced under expected operating conditions.

11. (New) The fluid injector of claim 1, wherein the needle does not rotate within the cartridge as a result of axial movement between the valve cap and the housing or between the cartridge and the valve cap.

12. (New) The fluid injector of claim 1, wherein the first or second axially extendable interface includes a gasket for maintaining the corresponding first or second seal within the axially extendable interface.

13. (New) The fluid injector of claim 1, wherein the housing and the valve cap have been manufactured precisely to form a precise fit between the housing and the valve cap, which alone maintains the first seal within the first axially extendable interface.